

Hobbies

WEEKLY

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ONE of the most popular toys for any boy is, probably, a fort, and we give here details for making a simple but very attractive one. Looking at the picture, Fig. 1, we note at once the most prominent feature of the toy—the Keep or Castle, as it is more generally called. This stands on a spacious 'parade ground' enclosed within four parapet walls, the tops of which, to the front of the castle, are battlemented.

In the front parapet wall, and central with it, is a gateway and draw-bridge leading to an outer wall with ramps sloping downwards each way.

The Wood Needed

Wood $\frac{3}{4}$ in. thick is suggested for all the wooden parts of the toy. Where wood cannot be got of sufficient width for the wide faces of the castle, two or, perhaps, three pieces can be butted together and glued up or pieces of wall-board used.

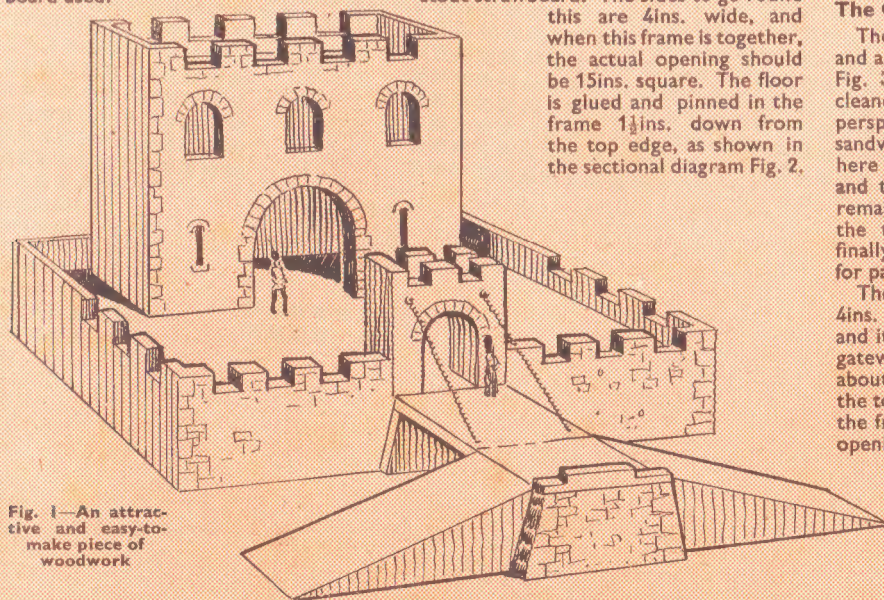


Fig. 1—An attractive and easy-to-make piece of woodwork

A SIMPLE TOY FORT

A toy such as this will receive rough usage, so the whole should be built strongly, and angle fillets and glued blocking pieces added wherever possible and, of course, out of sight.

There are four distinct units to be made to complete the toy. Each can be made separately and can be packed conveniently in the box-like section of the 'parade ground'.

The floor or base-board is 15 ins. square, and may consist of wallboard or stout strawboard. The sides to go round this are 4 ins. wide, and when this frame is together, the actual opening should be 15 ins. square. The floor is glued and pinned in the frame $1\frac{1}{2}$ ins. down from the top edge, as shown in the sectional diagram Fig. 2.

The cutting in of the battlements to the tops of the parapet walls must, of course, be carried out before they are assembled. Where the gateway stands in the front parapet wall an opening must be also cut $3\frac{1}{2}$ ins. wide, to allow the former to stand on the floor. The battlements are arranged to allow for this, as in the sketch Fig. 1. The front and rear walls should measure 15 ins. by 4 ins. and the two side walls which go in between them $14\frac{1}{2}$ ins. by 4 ins.

The Gateway

The gateway is a simple piece of work and a front view with all dimensions is in Fig. 3. Two such pieces are cut and cleaned up, and then a third piece, as the perspective sketch shows in Fig. 3, is sandwiched in between them. Note here the middle battlement is omitted and the opening between the two end remaining battlements cut lower. Glue the three sections well together and finally clean up edges and surfaces ready for painting.

The drawbridge is $3\frac{1}{2}$ ins. long and 4 ins. wide—the width of the gateway, and it is hinged to the lower edge of the gateway by means of pieces of tape about $\frac{1}{2}$ in. wide creased up and glued to the top surface of the bridge piece and to the front of the gateway each side of its opening.

The top surface of the bridge should thus be level with the main floor when the former is lowered to the ramp, as seen in Fig. 1. Two pieces of small-link chain may be fastened to the

bridge and to the top of the gateway, as shown.

The roadway is shown in detail in Fig. 4 and consists of five pieces of wood. It is made so the top roadway is level with the main roadway of the castle and

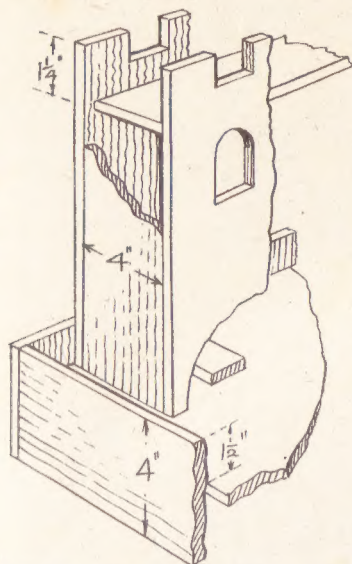


Fig. 2—Showing general construction

with the drawbridge. Two pieces forming the sides of the ramp are first cut to the shape shown, the actual length from end to end of the pieces being 11 1/2 ins., and its width 7/8 in. The square or flat portion at the top should be 3 1/2 ins. wide.

Front Road Entrance

From this the two sloping ends can be set out. Having drawn out and cut one side, the other can be outlined on the second piece of wood by drawing round it. Now cut a piece of wood 3 1/2 ins. long by 2 1/2 ins. wide and glue and nail it to the top of the two sides. This forms the continuation of the drawbridge roadway.

Each sloping ramp will be made from wood measuring 6 ins. long by 2 1/2 ins. wide, the top end being slightly bevelled to meet the top road piece. Glue and nail the pieces to the shaped sides, letting the lower ends overlap, as the

dotted lines show in Fig. 4. The projecting ends will later be cut away and glasspapered level with the lower edges of the sides, just as shown in the detail and the sketch.

The finish can be made attractive by the addition of an extra thickness of wood on the face of the outer side. This piece should measure about 4 ins. by 2 ins. and be shaped simply along its

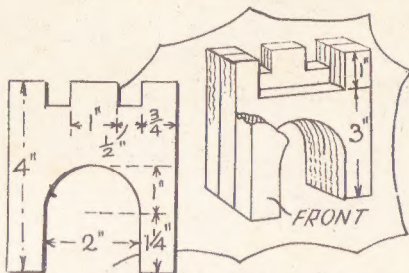


Fig. 3—Details of drawbridge gateway

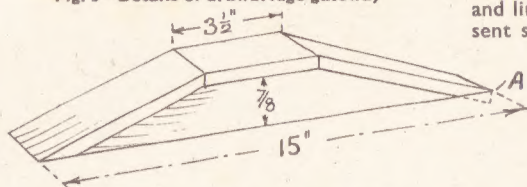


Fig. 4—The front road and ramps

top edge and sides. To stiffen the construction of the ramp one or two cross pieces may be put across inside between the sides and nailed from the outside. This may be done before the outer wall piece is added, the nail heads being thus quite covered.

The Castle is an interesting piece of work but quite simple to undertake. The front and rear walls may, if desired be identical in outline, but the archway should be omitted in the rear wall.

Make a full-size drawing of the front on paper from the detail at Fig. 5, noting carefully all the dimensions shown. Cut out openings and outline with the fretsaw and clean up. Use this cut-out as a template for making the rear side, omitting, as suggested, the outline of the arch.

The two sides are held together at the

top by a square of wood measuring 8 3/4 ins. by 4 ins. and this should be fixed 1 1/2 ins. down from the top as Fig. 2. Stiffening fillets of angle or square wood should be glued underneath the roof before the sides are added. Two more simple squares of wood 8 ins. long by 4 ins. wide form the side walls of the castle and they are glued and pinned to the front and rear walls.

Walls and Windows

The walls, just inside the archway, may be stiffened by putting pieces 4 ins. long by about 1 1/2 ins. wide from wall to wall, as detail Fig. 2 shows. If it is intended to fasten the castle to the base, then screws could be run through the latter into the crossbars.

To get a good effect in the windows, they may have celluloid glued inside and then ink lines drawn across to represent lead glazing. The whole of the walls should be painted stone colour or grey, and lined in in black or brown to represent stone jointing. The arches should have their stones carefully lined in.

The parade ground and other paths or roadways should be light brown in colour. Another method of finishing the ground area, instead of the paint as

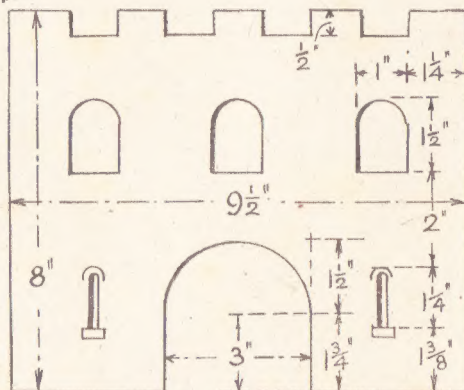
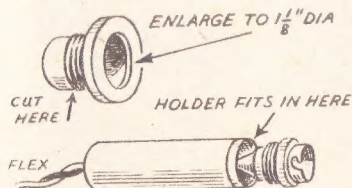


Fig. 5—How to mark out the front

suggested, the surfaces may be coated with glue, upon which sand or very fine cork dust or saw dust is sprinkled; either gives a good realistic effect. (326)

Safety Lamp

TAKE an ordinary shaving stick container—the type for which you buy refills, and cylindrical in shape and made of bakelite or other insulating material. Unscrew the base, cut down the surplus portion as shown in the

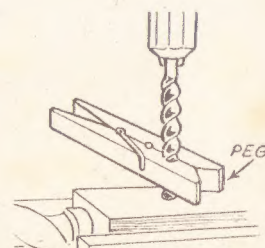


sketch, and enlarge hole to clear 1 1/8 ins. diameter. This will allow it to fit over the holder like a lamp shade, using the shade carrier ring to keep it in position. Next drill the top of barrel to take flex and; since the base is already threaded, it can be screwed into position, thus giving complete coverage and perfect insulation of holder.

Depth Gauge

HOW an ordinary spring clothes peg may be used to prevent a bit boring a deeper hole than required, is shown in the sketch. The peg should be attached to the bit at a height corre-

sponding with the depth of the hole to be bored. In this way, when the lower edge of the peg touches the surface of the woodwork you will know you have reached the required depth.



The first of two simple games to make to have FUN WITH PEG PUZZLES

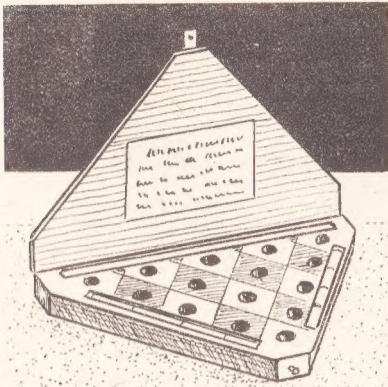


Fig. 1—The completed board in use

PEG puzzles are always intriguing, and just the things to hand out to guests for a few minutes diversion—or play yourself in odd moments. The aim in most varieties is to leave a single peg in a certain hole, play being according to definite rules, but in others, different coloured pegs have to be made to change places.

Like other hand-held games, more fun can be got out of them if solidly and neatly made. Ramshackle looking puzzles often seem to convey the impression that they are not worth solving. So care in making is quite worth while.

Two puzzles are shown here, one of the 'single peg' type, and the other of the interchanging kind. Wood of $\frac{3}{8}$ in. and $\frac{1}{2}$ in. thickness is used for the main blocks, with layers of $\frac{1}{8}$ in. plywood for base and lid. The underside layer of plywood is the simplest way of closing the holes and giving a bottom to the trays for the pegs.

First then the game shown in Fig. 1. Here is a triangular board in which is fifteen holes, all of which bar one, are supplied with short wooden pegs. The hole left vacant is at the middle of the bottom row and is clearly indicated by being surrounded by a coloured circle. All but this hole are given a peg and play starts by 'jumping' as in draughts, the peg jumped over being taken away, the aim being to leave the last peg in the central hole of the lower line.

The marking out of the board is shown in diagrams A and B, Fig. 2. Draw the triangle (C) with a right-angle at the top and sides of $4\frac{5}{8}$ ins. Scribe the line (h) $\frac{1}{2}$ in. from each of the sides and divide up, as shown in (B). At each $\frac{1}{2}$ in. space, now put a complete circle of that diameter. Join lines across between each pair of holes, also vertically downward which by their intersections give the positions of the inside circles. Mark, too, the lines at which the corners have to be cut off and draw in the three rectangles (a), (b) and (c) which are to be taken out as receptacles for the pegs.

The board being fully marked out, fix it on some firm base and with the main triangle as yet not cut out, drill a $\frac{1}{2}$ in. hole at each circle position. Also before the triangle is cut, take out for nearly a $\frac{1}{2}$ in. depth, the side channels with a sharp blade. Run the point along the outlines against a steel rule and then prise out the intermediate slice of wood with the gentlest of sideways pressures.

When all this has been done and the circular holes and channels cleaned out, the main triangle can be taken from the rest of the wood. Here again, to get perfectly clean edges it is good to run along the sides of the figure with the razor blade against the steel rule. This breaks the surface neatly and the rest of the cutting can be done with a fine saw. Sawing right away might easily break the small walls of the three channels.

Finally square out the board, as shown in the sketch of the completed game and Fig. 3, and stain or paint the alternate squares a contrasting colour, as with an ordinary draught board.

Now comes the lid and base. These are two pieces of $\frac{1}{8}$ in. plywood, the same shape as the main block just made. The base is secured to the underside of the

main piece with a few sprigs and glue, while the top is fastened with a cloth hinge to the longer side of the triangle, the cloth being glued at the back as Fig. 4, so that the lid can hang down if desired. In the closed position the lid is held at its peak by a simple strap holder taken over on to a pin in the front edge of the main block.

Lastly come the pegs. These should, if possible, be made of hard wood and must fit the holes easily, but not so that they lie over at an angle. They must be coloured in some bright hue, and dye, rather than paint, will be found best for the job. These important items are $\frac{6}{8}$ ins. long, so that six can be housed in the bottom channel and four each in the two side channels.

Lid and base can be finished in the same colour as the dark squares and for neatness the words 'FOURTEEN PEG PUZZLE' could be put on the lid in bright yellow or red paint, the letters as shown, being used which look well and make it impossible to go wrong in the outline. Also if desired, the aim of the puzzle could be set out on a small sheet of paper and glued on to the inside of the lid.

You can give quite a lot of variety in your own play to the puzzle by tinting one peg another colour and setting this at random about the board, this being the peg which has to be the one left at the lower centre.

Or again the hole in which the last peg has to be left can be changed, a new hole being decided upon at each try. Indeed, one of the advantages of peg 'jumping and removing' games is the number of aims that can be brought in, the ingenious player generally being able to invent quite a number for himself.

(To be continued)

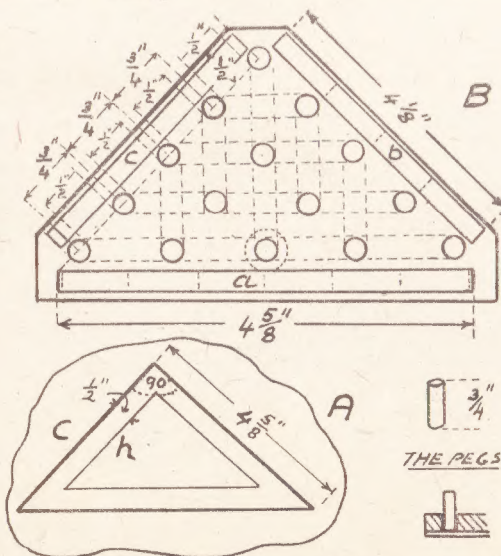


Fig. 2—Details of construction

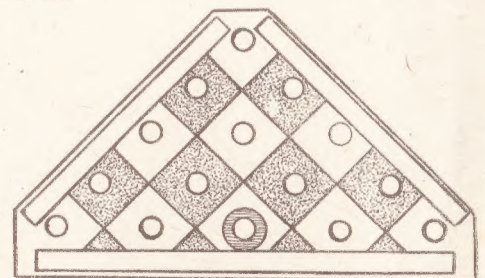


Fig. 3—Plan view of completed board

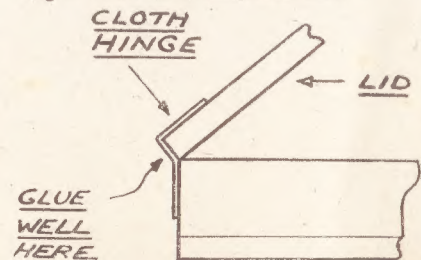


Fig. 4—How to hinge the lid

The handyman can easily construct AN ALL-IN CARDBOX

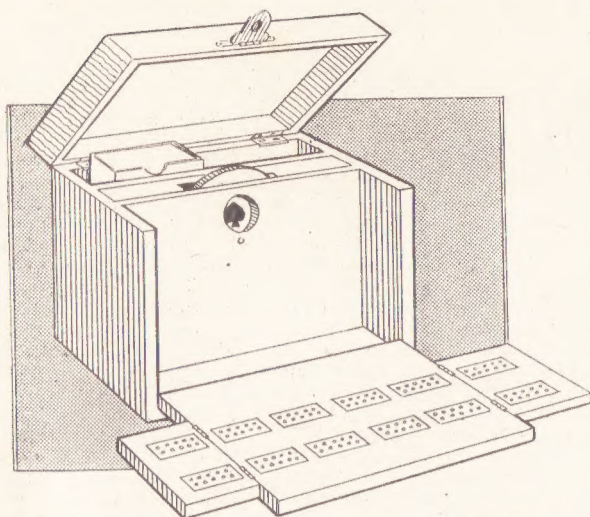


Fig. 1—The box open and Fig. 2 (below) closed

distinct pieces. The top tray-like section is afterwards hinged to the larger portion to form the lid. This is plainly illustrated in Fig. 2. The front of the box—that piece which was previously screwed to the ends, is removed and the smaller top piece cut from it, and glued to the top to form the front rail of the lid.

shown, keeping their extremities not more than $1\frac{1}{2}$ ins. from the centre point of the disc.

Make a $\frac{1}{8}$ in. hole in the centre of this and hold it in place between the two partitions and judge the position for the pivot hole to be made in the front. Bore a hole right through both partitions, seeing the bradawl or drill passes through the hole in the disc.

Now put in a round-headed screw to fix into the back partition and see that the disc revolves freely round it. The cut-away portion in Fig. 5 is to show the positions of the various parts. At Fig. 6 is detailed the $\frac{1}{4}$ in. piece of wood which will close the space between the two

partitions. Cut at the same time, allowing the disc to project slightly for handling.

The next step will be the making of the front which is hinged to the bottom of the box. The piece for this front has, of course, already been prepared, so it will now only be necessary to cut

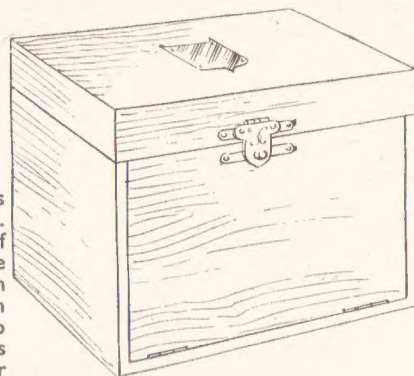
and hinge the two end flaps. Fig. 3 shows clearly these and the manner in which they are hinged to the front. The direction of the grain of the wood must be noted.

Marking

When the flaps are thrown open they will appear as Fig. 2 and the twelve squared spaces shown will be drawn in in pencil and the lines afterwards gone over with indian ink. The holes must be carefully spaced out and drilled with a fine drill.

The whole article should be made from a good wood such as mahogany, and finished with either varnish or french polish.

The cutting list of wood will be found useful when setting out and making up this novelty.



Two partitions are next cut 6 ins. by $3\frac{1}{2}$ ins. In one of them there will be a hole cut 1 in. in diameter through which the trump suit will be seen, as in Fig. 3. The other will be plain and will be glued in the box 1 in. distant from the back. The front partition can then be glued in $\frac{1}{2}$ in. away from its companion.

MATERIAL REQUIRED

One piece—13 ins. by $3\frac{1}{2}$ ins. Top and bottom.
One piece—12 ins. by 4 ins. Sides.
One piece—8 ins. by $3\frac{1}{2}$ ins. Ends.
One piece—12 ins. by $3\frac{1}{2}$ ins. Partitions.
One piece—12 ins. by 4 ins. Disc, flaps on lid, etc.
Two pairs $\frac{1}{4}$ in. brass hinges.
Two pairs $\frac{1}{4}$ in. brass hinges.
One catch for lid.

The next step is to make the disc bearing the five indicators. Cut out the disc shown in Fig. 4 from $\frac{1}{4}$ in. wood, and on it paste a piece of stout hard-surface paper and then draw in the five signs

THIS novelty games box presented to our readers this week for making up will, undoubtedly, make an instant appeal. There is space for two packs of playing cards, a novel trump indicator, and a folding full-length cribbage or peg board. The whole closes up into an ordinary box, the lid of which is held in place by a neat brass catch, as Fig. 1 and Fig. 2 will show.

The construction of the box is simple, and is made up from $\frac{1}{4}$ in. wood throughout. The size overall is, length 6 ins., width 3 ins. and height $4\frac{1}{2}$ ins.

The box is made from pieces cut to the following sizes: bottom and top each 6 ins. by 3 ins.; two sides each 6 ins. by $3\frac{1}{2}$ ins.; and two ends each $3\frac{1}{2}$ ins. by 3 ins. The ends are glued between the bottom and top, and one of the sides is also glued between the ends and between the bottom and top.

The remaining side which is not a fixture between the ends, is screwed temporarily in place. The reason for this must be made clear. When the glue has hardened, a line will be drawn at a distance of $\frac{1}{4}$ in. down from the top edge all round the box.

The box is then held firmly and a saw cut made on the line, thus making two

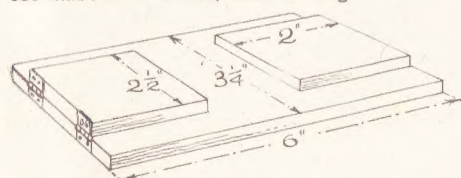


Fig. 3—Base with hinged flaps

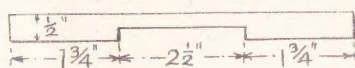


Fig. 6—The spacing piece

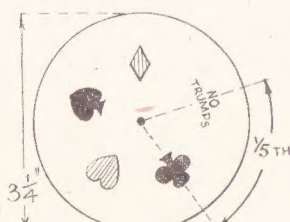


Fig. 4—The trump disc

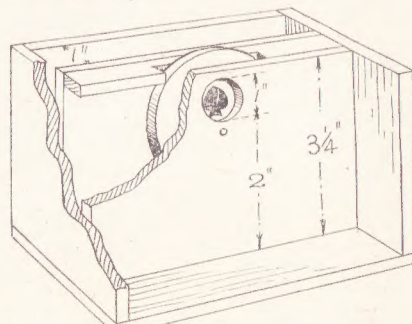


Fig. 5—Interior cut-away view

This simple mechanical toy to make is A PUSH-ALONG WHEEL

THIS mechanical novelty would please any young child as a Christmas present. It represents a form of Big Wheel, a popular attraction at some fairs, and rotates as it is pushed along, so that the kiddie can see it working. Fretwood or plywood, with a small piece of deal, are the materials required for its construction.

Body Part

The body part, Fig. 1, consists of a base with two side pieces to act as bearings for the wheels. These parts can be built up from $\frac{3}{4}$ in. deal, quite thick enough for such a job. The slot at the rear end is cut out wide enough for the handle, a length of deal, $\frac{3}{4}$ in. thick

MATERIAL REQUIRED

One piece of $\frac{3}{4}$ in. deal—10 ins. by 4 ins.
Panel of $\frac{1}{2}$ in. fretwood—8 ins. by 20 ins.
Pair of 4 in. wheels and stick for handle—
 $\frac{3}{4}$ in. by 1 in. wood, with approximately
1 ft. of $\frac{3}{4}$ in. diameter round wooden rod.

and 1 in. wide. Mortises are cut in the base, in which the standards supporting the big wheel are fitted. These should be $\frac{3}{8}$ in. wide and $\frac{1}{2}$ in. long, supposing fretwood is to be used for them; if plywood the width will be, of course, suitable if the thickness of wood exceeds the $\frac{3}{8}$ in. mentioned.

Pulley Connections

The fifth slot, that between the bottom pair of mortises, is $\frac{1}{2}$ in. wide and $\frac{3}{4}$ in. long. It is for the twine, connecting the pulleys together, to run through. In the two bearing parts, through which the axle of the wheels run, bore $\frac{3}{8}$ in. holes through, exactly where shown. Fix these parts to the base, underneath, with the axle holes truly in line at $1\frac{1}{2}$ ins. from the front edge. Now bore a $\frac{3}{8}$ in. hole through the sides of the slot in which the handle is to be fixed, for securing the handle later on.

The wheels and axle are shown in

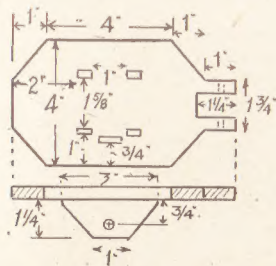


Fig. 1—The platform and sides

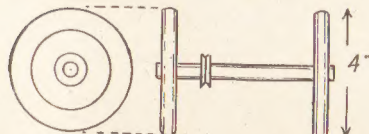


Fig. 2—Wheel and pulley detail

Fig. 2. The wheels can be cut from $\frac{3}{8}$ in. or $\frac{1}{2}$ in. wood, but it would be better to purchase these, as accurate wheel cutting is no easy job without a lathe. The central holes are bored, of course, to suit the axle, a length of $\frac{3}{8}$ in. round wood rod. The length of this should be measured across the base, with enough added on to admit the wheels with a trifle over.

Assembly

Cut a 1 in. diameter disc of fretwood and file a groove round its edge. This will do for one pulley. Bore it to fit the axle. Glue one wheel on, push the rod through its bearing holes, and with the wheel not quite touching the sides of the base, make pencil marks on the axle for the place on which to fit the pulley, which should come directly under the slot above. Glue the pulley on, then the second wheel.

Support Standards

For the pair of standards, cut two at (A) in Fig. 3, from $\frac{3}{8}$ in. wood to the shape given. The slot at the top is just $\frac{3}{8}$ in. wide. To the length of the standards, add $\frac{3}{8}$ in. for the two tenons at the bottom. These will be cut to the size, and spaced apart, to suit the mortises in the base. On the centre, and at $\frac{3}{4}$ in. from the bottom, bore a $\frac{3}{8}$ in. hole through both for the axle of the second pulley already mentioned. Now glue the standards in the base.

Cut a piece of $\frac{3}{8}$ in. rod about 2 ins. long for the axle, and cut and shape a second 1 in. diameter pulley. Glue this pulley to the axle, as at (B) and push the rod through the bearing holes in the standard. Keep it from riding out by inserting a small nail through the rod at the end opposite the pulley.

Now connect the pulleys together with twine or thin cord, and see, when

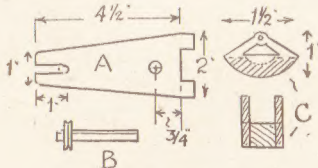


Fig. 3—Wheel support parts

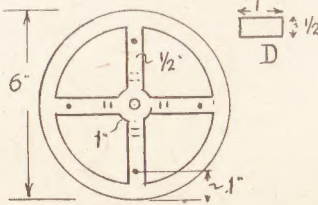
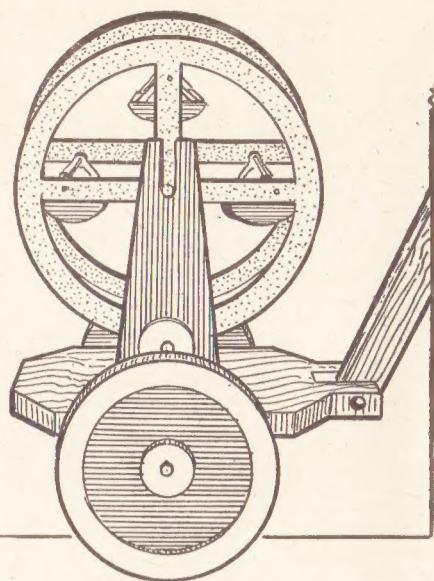


Fig. 4—The main wheel shape



the body is pushed along, that the axle, through the standards, rotates evenly and easily. This freedom of action can be better ensured by lubricating the bearing holes of both axles with a spot of paste, made by mixing powdered blacklead with a little lard. Be careful not to mess the wood up when applying the lubrication, just work it in the holes carefully with a stick of wood.

The Large Wheel

The big wheel, itself, Fig. 4, is cut from the $\frac{3}{8}$ in. fretwood to the diameter given. Bore the central holes $\frac{3}{8}$ in. Cut two 1 in. diameter discs of $\frac{1}{2}$ in. fretwood, and glue these, one to each of the wheel sides, to the outside of them. Then continue the axle holes through them. It would, perhaps, be easier to glue these discs on first, then to bore the holes through both thicknesses at once.

The distance pieces (D), four of which are required, are cut from scrap bits of fretwood, and glued and nailed between the sides of the wheel at $\frac{3}{4}$ in. distances from the centre, about where shown, in fact, by the dotted cross lines.

Axle

It will better ensure the axle holes being kept in alignment, if the axle is pushed through and kept there while the distance pieces are being fixed between. The axle is a $2\frac{1}{2}$ in. piece of the round wood rod. At the spots shown on the wheel side, drill holes to take pieces of stiff wire for the boats to swing on.

The boats (C) in Fig. 3, consist of side pieces of $\frac{3}{8}$ in. wood, cut to the complete shape, with a $\frac{1}{2}$ in. thick piece of deal between, cut to the shape shown by shaded lines. The holes at the top are drilled to suit the wires mentioned.

(Continued foot of page 198)

Some hints on the proper winter care of a GARDEN FISHPOND

If your garden is suitable for the purpose, a fish-pond or pool, properly stocked with plants and fishes, will prove of endless interest to you and your friends. The construction of such can well be carried out during winter at favourable periods, but it is not wise to attempt making a pond during frosty weather.

More and more people are attempting this fish pond hobby, even in small gardens. It can be made, of course, to fit in with size of garden, but the bigger it is, the more fish it will support. Even a pool 5ft. or 6ft. long by 3ft. wide and some 18ins. deep will prove attractive. In a large garden a much bigger pond is possible.

There is nothing really difficult in constructing a pool, but it is obvious that much care must be taken to ensure that it is perfectly watertight. In writing of such a pool it is to be noted that one refers to a 'stagnant' piece of water—that is, a pond that does not require the constant use of mains water, neither requiring a pump to circulate the water.

The object is to retain as much of the original water with which the pond is filled at first as long as possible without having to change it. To this end plants must be introduced to aerate the water.

Suitable plants include *Anacharis*, *Ranunculus*, *Sagittaria*, *Callitriche*, and *Myriophyllum*. These aerating aids are your best allies in the pond, but must be controlled when necessary.

Making the Pond

First, there is the excavation of the ground to the required size and shape—round, square or rectangular as desired. When this has been done, the bottom and sides must be well lined with good concrete, to the proportions of one bucket of cement, two buckets of sand and three buckets of shingle or small pebbles, and half-a-bucket of water.

You mix the sand and cement together first, and then add the rougher stuff. Thoroughly mix with water until the material is of an even consistency and colour. Cover both bottom and sides with the mixture to at least a thickness of 3ins. to 4ins. Make certain that all the corners—if making a square or oblong pond—are well cemented, in order to prevent any leakage.

When the concrete is absolutely set

and dry, it is not yet ready for use. New concrete is harmful to fish life, as many beginners have found out to their regret. So you have to fill the pond and leave it to soak, then empty it and refill. Even a third time will not do any harm, but will be all the safer before introducing your fishes, and plants.

Helpful Plants

Usually the amateur will find that the water in the pond tends to become cloudy. After the introduction of the necessary aerating plants and fish, however, it should gradually clear. Remember, in obtaining plants, to use the better oxygenators as *Anacharis* or Canadian water-weed. This is excellent for the purpose, especially as the fish will browse amongst it. You can get this weed and others already mentioned, from dealers.

The bottom of the pond will need to be covered sand and loam in which to plant the aerators. To plant *Anacharis*, tie a few strands together with knitting wool, attach a small stone, and sink it into the sand. *Callitriche* (starwort) is also excellent. Plant some strands separately in the loam and sand.

If your pool is properly stocked with the several oxygenating plants, water snails, and other creatures, the water will clear itself in course of time. But some scum may collect, especially in hot weather, and this can be raked off. Indeed, as soon as any surface scum appears, get it out at once, for it quickly spreads and will quickly cover a small pond if left.

Likely Pond Fish

Likely fish for your pond can be obtained from the dealers in aquaria, or you can get certain species from local ponds where fishing is permitted. The tench, particularly the golden variety, for one, the mirror carp for another, and, best of all, the golden orfe, which is certainly one of the most suitable. This fish will attain 10ins. in length in a roomy pond. It likes a meat diet, and will also catch insects in summer at the surface.

Minnows are adaptable to a pond life, and are attractive little fish for a small pond, but they should not be introduced to a water where you desire to keep and breed goldfish. Of the latter varieties the shubunkin is an interesting one, and will breed during the warm weather without trouble. They can be

fed on chopped worms, dried foods, insect larvae, etc.

Roach, rudd, and dace may also be used for stocking a pool, but avoid perch, which are depredators and eat other small fish. If procuring the stock, fish locally from a nearby pond or stream—they are better if caught from a 'stagnant' water for your purpose. Procure them as young ones; they will soon settle down in their new quarters and grow into attractive fishes. Also get Planorbis snails and a few freshwater mussels to act as scavengers and provide natural food also.

Shade and Sunshine

When constructing a pond bear in mind that fish do love a spot of shade. Endeavour to arrange something that will afford this at some part of the water; in bright sunshine fish will appreciate it. Water lily plants in a fairly roomy pond will provide shelter and shade; they are easily planted.

By the way, if convenient to you, when making the pond have a shallower part, as this will be more natural for the fish, which in their native habitat are used to shallows and deeps.

No Overfeeding

Do not overfeed pond fish, as what they do not consume only drops to the bottom and decomposes, fouling the water. Give them plenty of room, do not overcrowd. Where a garden is fairly large and there is ample spare ground round the pond, it is nice to grow a few marginal plants as Flowering Rush, Yellow Iris, Water-mint, and Water Forget-me-not.

All this, of course, the size of pond, area of marginal ground to be planted, shape, etc., must be left to the amount of space available. You can make a sunken pool—or a raised pool; the former can be made more artistic. A point for the amateur to watch, when constructing his first pond, is the necessity of having the top edge level all round.

A garden fish pond, when well made and sited, and properly planted and stocked with the right kind of fish, can be a source of perpetual interest and pleasure, summer and winter. Thinking of the latter season, be sure and have a depth of at least 18ins. at one part of the pond, so the fish will have a place of retreat if weather is very severe and the water freezes. (319)

Push-along wheel—(Continued from page 197)

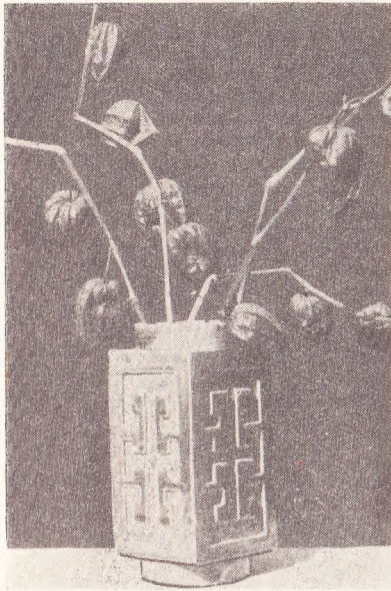
Glue them together and either cramp up until the glue is hard, or nail with fine fretwork nails.

Fit the four boats to the wheel with suitable lengths of the wire. Glue the axle rod in and test the action. If all is O.K., the whole can be painted, pre-

ferably in brilliant colours. If the wheel tends to slip, then cover the axle, going through the standards and on which the rims of the wheel rest, with a covering of thin rubber. A strip off an old inner tube would do nicely, and should be glued round.

Finish the article by fitting the handle to the body with a $\frac{3}{8}$ in. iron bolt through the slot. Cut this handle to a length to suit the child for which the toy is intended, and fix it at the right angle, by means of the bolt, for the article to run along level.

A glass jar and some wood converted into a pleasing CHINESE FLOWER VASE



The picturesque holder in use

ONE never seems to have quite enough flower vases in the home—at least, really distinctive ones. But this Chinese pattern vase is certainly unusual and attractive and not at all difficult to make. The photograph gives a good idea of what it looks like, though it cannot convey the charming colour effect of the green vase and the orange 'Chinese Lanterns'.

Jar Container

The 'vase' is actually a box-like container for the glass jar, this latter being a suitable pickle, mayonnaise, preserve, etc., jar, approximately 6ins. high and 2ins. diameter. If it is possible to obtain plastic sheets and these are joined in a water-tight way, the interior glass jar can, of course, be omitted. But we will describe the wooden-cased affair. This, when properly made and painted, gives the effect of glazed pottery ware.

Fig. 3 shows, at a glance, the main body work—just a plain nailed-up wooden box to contain the jar. In the top piece (obviously of plywood), a hole is cut so that the jar can be taken in or out. We will presume that the sides are 3ins. wide. If they are otherwise, the dimensions of the overlay must be altered. Note that the top and bottom overlap the sides, all round, by $\frac{1}{4}$ in.

The Sides

The sides of the box must be quite smooth. This is easily done by laying a sheet of glasspaper face up on a flat board and then rubbing the box sides over it. The hole in the top can be neatened off by wrapping glasspaper

round the actual jar and turning it round.

The next step is to prepare the pattern for the overlays. Fig. 1 shows a half pattern. When drawn, this can be reversed, on the centre line (C.L.), and a complete pattern, as in Fig. 2, made. As the pattern consists entirely of straight lines, no difficulty should be encountered in preparing it.

Four Patterns

Four patterns are required. These are pasted down to $\frac{1}{4}$ in. plywood and when dry, cut out with a fretsaw. In Fig. 1, the actual pattern is shown stipple-dotted.

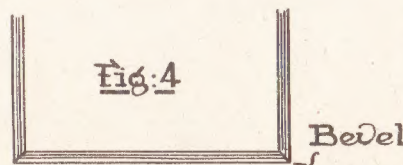
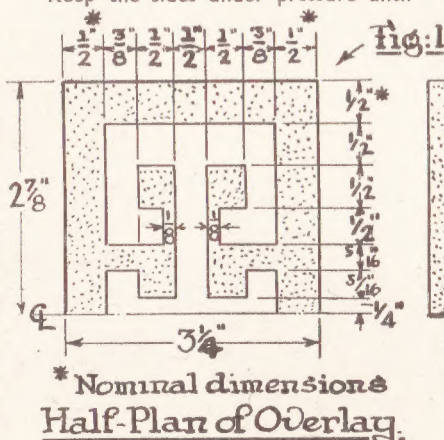
The pattern, as dimensioned is correct for a box with sides 5 $\frac{1}{2}$ ins. by 3ins. and with bevelled edges (Fig. 4). If, however, the carcase is of some other size, the dimensions will have to be altered, chiefly by altering the $\frac{1}{4}$ in. dimensions marked 'nominal' in Fig. 1. Again, if it is desired to fit the overlays as in Fig. 5, one overlay must be as wide as the box and the other, thus plus two thicknesses of overlay.

The utmost care should be taken to get sharp square corners on the overlay. Whenever possible, approach a corner from two directions (Fig. 6). Make some files by wrapping (or better, gluing) glasspaper on to pieces of stripwood and get all angles sharp and clean.

The overlays are now glued on to the sides. Apply the glue thinly, and if any oozes out, clean it off with a pointed stick, etc., before it gets hard. Dried glue left on the model will completely spoil its look.

Finishing

Keep the sides under pressure until



the glue has dried. Then glasspaper well, so that the top and bottom parts are flush with the sides. Clean off all sawdust, using a small brush to get it out of the hollows and then apply a coat of size or aluminium paint. This dry, paint with enamels or one of the so-called Chinese lacquers. Green (jade) is a particularly apt colour.

Several thin coats are much better than one thick one, and great care must be taken to prevent paint piling up in the hollows. The top of the glass jar can be painted, too, inside and out. The jar, of course, is removable for refilling, etc.

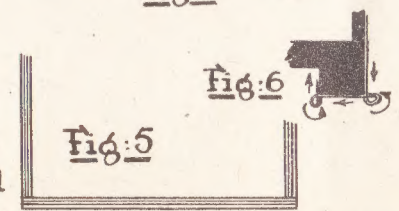
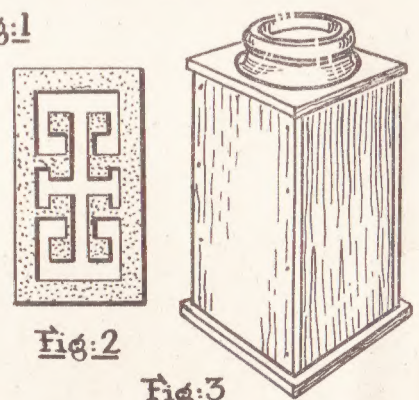
An Alternative

In the photograph, a slightly different arrangement has been followed, and is offered to readers as an alternative. The

A Safe Screw

IF you wish to put in a screw so it is impossible to get it out again, do it this way. Whatever job you want to put the screw in, first of all drive it in, then file the top of the screw down to the level of the slot where the screw-driver fits. It is impossible to get the screw out if done like this.

writer was fortunate in getting a plastic cylinder. The top and bottom of this can be seen in the photograph, the middle, of course, being screened by the wooden carcase which is forced on to it. The cylinder was converted into a water-tight jar by having a plastic disc cemented in the bottom.



The home handyman and carpenter should make this SAW TRESTLE

EVERY home handyman ought to have a pair of sawing trestles, for not only do they conduce to more accurate work but they save lots of 'hard labour'. Quite a number of amateurs spend most of their energy, when sawing, in steadying the wobbles of an old kitchen chair or the like, used as a support.

Apart from being used for sawing, the trestles are useful in plenty of other jobs—when assembling larger pieces of carpentry; for use during home decoration, etc.

The chief aim should be to make really substantial trestles with strong joints. A flimsy shaky trestle will defeat the very purpose for which it was made. The fact that no one is likely to admire such a utilitarian piece of equipment for its beauty of design and finish, nor the fact that, after some years, it is likely to be pitted with saw-cuts, should be an excuse for crude workmanship or shoddy joints.

Secondhand Wood

The present writer used wood from a front garden gate. This gate had rotted badly at the joints and base and was replaced by a metal one. When the rotted wood had been cut away, quite a lot of useful wood was still left. Some of it was of 4in. by 2in. section, which is exactly what the writer would have chosen if new wood had been ordered. But although this section has been specified on the drawings, it will be understood that wood of other sections can be used, provided it is not too thin. If using old wood, keep a look-out for old nails that may damage the saw, etc. If there is not sufficient wood for a pair of trestles, one may first be made.

The top piece (A) is easily dealt with, being merely a 2ft. 3in. length of 4in. by 2in. wood. To mark off the sloping uprights (B), however, it is best to lay out a full-size plan in chalk, either on a

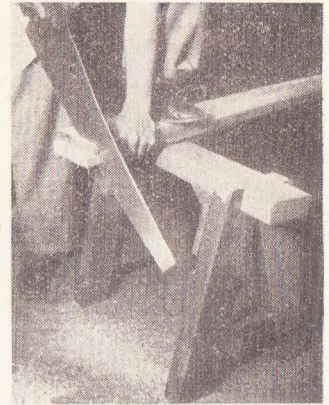
large sheet of brown paper or drawn on the floor (see Fig. 3).

First draw a vertical *a* and a base line *b*. Mark off 8ins. to point *c*, at the base. Mark off the vertical height (1ft. 7ins.). At the top, mark off point *d*, 2ins. down. Now lay the 4in. wide wood (cut to approximately 2ft. long), so that one side touches *d* at the top, and the other touches *c* at the bottom. The wood is shown in Fig. 3 in chain-dotted line. With an adjustable bevel (indicated at *g*) lines *f e*, *c b* and others horizontal to the ground may be marked off.

The adjustable bevel is not on the priority list of an amateur's tools but it is by no means a fancy luxury and it will soon repay its not-too-high cost. With the bevel thus set, the position of the cross rail (C) can be marked off, starting at 3½ins. from the base. This cross-piece is of 3in. by 1in. section and is dovetailed in pieces (B), as shown in Fig. 5.

The tops of pieces (B) will look as shown in Fig. 4. Rails (D) are cut from ¾in. stuff, 4½ins. wide. The ends can be left projecting and then sawn off in line with the legs (B) after being fixed with screws. Before this is fixed, however, brackets (E) are attended to, as they have to be screwed to part (D), and this cannot conveniently be done after (D) has been fixed.

These brackets are of 3in. by 2in. stuff, 5ins. long and shaped as shown. They are screwed to top piece (A) as well. All other joints are firmly screwed with



long screws, not too thin, and it is most essential to drill preliminary holes for the screws, otherwise driving them in will be either extremely laborious or even impossible.

These brackets are essential, as it is not convenient to have another cross rail lower down, as it would get in the way of the saw.

Despite all care it will often be found that the trestle does not stand on an 'even keel', but a piece of rubber nailed on the short leg will remedy the matter.

The photograph shows the trestle actually in use and to kill two birds with one stone we have also included a useful hint on sawing. It is sometimes found that a plank—possibly a shelf to fit into a wall recess—is a little too long, sometimes only ½in. or so. To saw this much neatly off a plank with a handsaw is a tricky job.

All one needs do, however, is to lay this plank over another and saw the two planks together, the lower plank (the 1in. or 2ins. which is sawn off being regarded as expendable) having a fair amount taken off—enough to support the thinner cut, above. The illustration shows the idea at a glance (314)

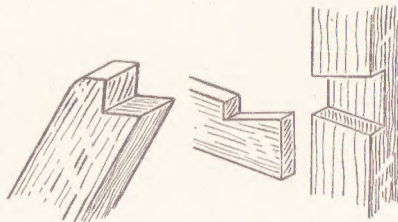


Fig. 4—Top of leg] Fig. 5—Dovetail of crossrail

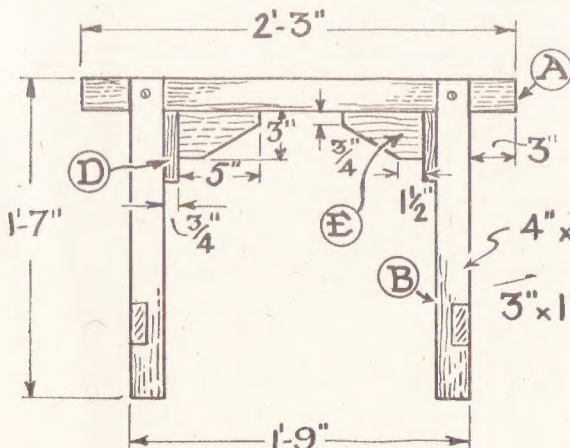


Fig. 1—Side elevation showing main parts

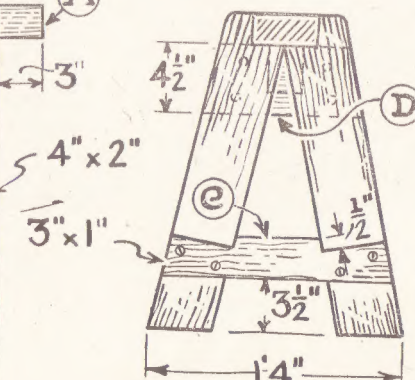


Fig. 2—End view and dimensions

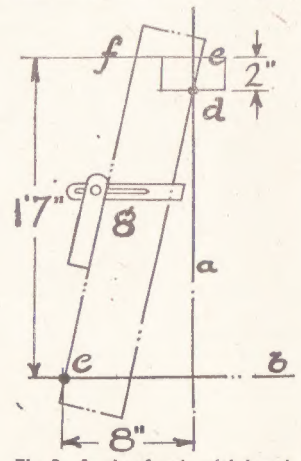


Fig. 3—Angle of ends with bevel in place

Economy in wood and a novel method shown in ANTOFRET CUTTING

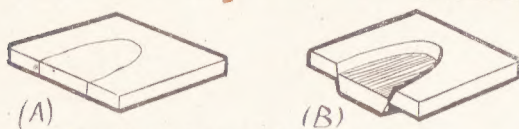
SOME of our readers who have followed the pages of *Hobbies Weekly* for many years will remember the introduction and popularity of a type of wood-cutting called Antofret. In those days, both paper and wood were plentiful, and special designs and parcels were introduced for what was a popular procedure.

Unfortunately, restrictions of all material prevented the subsequent carrying on of this phase, and the coming of the war caused its disappearance altogether. But although the large designs previously published are impossible, the principle of the work remains, and the novelty and usefulness of it as explained here, will probably appeal to many who have not previously known of it or given it much thought.

Several Steps

The point is, that a single piece of wood can be made to provide two or three surface levels, and so make for economy, as well as usefulness. The matter is quite simply explained, and the owner of a fretwork frame or machine can easily try out his own experiments with pleasing results.

In the ordinary way, the fretsaw must



How the sloping cut makes a dropped piece



Three steps of wood from one piece

be maintained perfectly vertical in its cutting, so that any interior fret cut from a piece of wood can be pressed through either way. But imagine for a moment that you are cutting an inside circle in a piece of wood with the saw held slightly at an angle. You go right round the circle and then extract the saw in the ordinary way.

Cutting Angle

Instead of the wood, however, falling out either side, you will find that by pressing it through one way, it will stick and become wedged into the surrounding piece. The angle of the sawcut is very slight, and the nearer it is to vertical, the further the piece of wood can be pressed through.

Then, too, of course, the thickness of the actual wood makes a difference. If

you are cutting a thick, say, $\frac{1}{2}$ in. piece, then the projecting part pushed through and wedged can go $\frac{1}{4}$ in. outwards before it becomes fixed. The diagrams here show exactly what happens, and you can see how easy it is to make a second and raised surface from a single board.

It is impossible to give any definite angle of cutting because it will vary not only with the thickness of wood, but also with the grade of saw used. Obviously, if a coarse grade blade is doing the work, a much thicker line is cut away, and the wood will press through further.

The user of the handframe must be particularly careful to ensure exactly the same angle the whole time, otherwise the part pressed out will not meet its surrounding framework at all points.

At one time there was a special tilting table provided, which allowed that part to be sloped so that the upright saw was maintained in operation. If you find, however, with the ordinary flat cutting table that it is a little difficult to get the correct angle constant, then you may like to arrange a wide wedge of wood between the cutting table itself and the workbench which slopes the table at the required angle.

This as previously mentioned, varies with each thickness of wood, but the variation is so slight that the table at the same angle is quite satisfactory.

Machine Workers

The machine worker, naturally, has an added advantage here in that he can actually tilt the table of the machine. It is held rigid by an arc of metal tightened to the underside by two wingnuts. Loosen these two wingnuts slightly, and then depress the table either to the right or left, and screw the wingnuts tight again.

Make your test cut in the same thickness of wood as you propose to use, and by trial and error, get the table at the right angle, finally tightening the nuts to maintain it at that the whole time. Another point to remember is that the direction in which you cut, will make the difference of whether the piece

cut out is pressed up or down. You can see this also in the diagrams herewith.

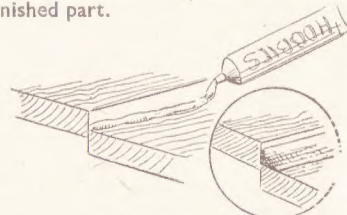
Up or Down

The saw cutting with the top sloping inwards, allows the work to be pressed up. The reverse angle, naturally, provides for the part to be pressed out downwards. Some people in cutting, work from left to right, whilst others take the reverse direction. It does not really matter which is done, providing the same direction is maintained throughout the whole operations.

Remember, too, that this type of cutting effects great economy in wood, because no part of it is wasted. Normally if you want, say, a small pin tray with a rim and a base, you have to cut two boards and glue them together. In this Antofret method, the same piece of wood is used, the base portion being merely pressed downwards to form the recess required.

Drill on the Line

Because of this using of the material, you must ensure the drill hole is made actually on the cutting line, and preferably at the angle at which you are going to saw. For the same reason, it is best to use a fine drill point, and a sawblade which is coarse enough to fill that drill hole. If you make a large hole and use a fine saw, then, obviously, the actual hole will be quite visible in the finished part.



Glue run into the inside angle

Normally, if you cut out the interior work like this, it can be pressed through the main piece and there sticks very firmly. You can, however, if you wish, add a slight coating of glue along the edge of the two parts that meet, to make additional strength. If, too, you are using the cut parts in a base or something similar where the underside will not be seen, then you can run in a tiny ribbon of glue to the angle of the

(Continued foot of page 202)

A Craftsman's Notebook



A Fine Miniature Railway

BUILDING models interests people of all ages, in all walks of life, and in all parts of the world, as we see from the splendid examples of completed models frequently illustrated in these pages. In a newspaper I recently read of yet another fine piece of work accomplished by a Vicar. And from what I saw of it in an accompanying photograph, the model certainly looked realistic.

This particular model, a railway, contained everything one could wish for—though, of course, it is one of the fascinations of models of this sort that one can keep on adding extra touches till in some cases it could extend over the whole floor of an attic or spare room.

Besides trains, signals and electrically-operated points, further touches of realism included such buildings as cinema, post office, mill, and shops, in the vicinity of the station. While adjoining the railway itself there were the warehouses, engine sheds, and water tower. And I gather that there is still some further work to go into it.

Unusual Nesting Places

BIRDS sometimes choose most unusual places for their nests, and I have heard of eggs being hatched in an excavator and a petrol pump, which were in actual use when the birds first started to build there.

Blue-tits, particularly, seem to favour awkward out-of-the-way places. While staying on a farm I went to try my hand at restoring an old water pump that had stood unused for a long time in a corner of the yard. Imagine my surprise when I started dismantling operations on finding a nest of young ones inside. Needless to say I postponed my attempts on the pump until the occupants, which turned out to be tits, were safely away.

On another occasion I saw a pair of tits making frequent journeys to and from a tiny crevice in the brick wall of an old building. So small was the entrance

one would never have suspected there was a nest behind, yet the birds approached and entered at surprising speed. Each time they left they carried in their beaks a tiny bit of white stuff, which I think were bits of shell being carried away and dropped far from the nest so that no evidence of its presence would be strewn about the entrance.

Curing a Leaky Tap

WHEN a tap continues to drip after being turned off, the remedy is usually a new washer, the fixing of which has been described previously in these notes. Sometimes, however, the tap is in order in this respect, but water oozes

the leading part. Though only a modest 800ft. in length (less than 15 minutes showing time) it was an important stepping stone towards the popularity of the cinema as a means of entertainment. For this was the first complete story film. Previously they had been of a news or scenic nature.

Movies were only beginning fifty years ago, of course, and even if pictures dithered and there was an appearance of 'raining' on the screen, the experience of seeing them actually move was new and marvellous. Well worth the 2d. it cost to go in.

As their entertainment and commercial value was realised it no longer sufficed to throw films in with music hall

Design for a Model Transporter

THIS week's gift design is for making an attractive model of the Crane's Transporter from full size patterns provided. A kit of material (No. 2878) is obtainable from Hobbies Branches for 4/5 or post free from Hobbies Ltd., Dereham, Norfolk for 5/3.



out at the top near the handle. In this case the stuffing box may be at fault.

You will see the 'stuffing box' just below the handle, and to get at the inside the circular nut with a milled edge will have to be unscrewed—gas-pliers will probably be necessary to loosen it.

Any old bits of stuffing inside this container should be poked out and replaced with fresh material. Soft thin twine well greased (tallow or lard will do) should be stuffed firmly into the box till nearly full. Then replace the metal cover, turn the water on and off a few times to settle the new material in place, and finally tighten the cap.

Early Days of the Cinema

IN 1903 a film called *The Great Train Robbery* was produced by Edison, with G. M. Anderson (Broncho Billy) in

turns as novelty items or dash them off in fairground sideshows. By 1902 cinemas began to open, the Nickelodeons (so called because of the Nickel admission) becoming popular in America. At that time an American innovation, known as Hale's Tours, was to equip the interior of the hall like a railway coach and show films taken from the front of a train. When the show started the hall rocked gently and the audiences had the impression of going on an actual journey.

Films, as well as cinemas, improved, and the next dozen years saw the beginning of the regular weekly news reels, the slapstick comedies which set audiences rocking in their seats, the thrilling serials which left the leading players in such a predicament at the end of each instalment the audience simply had to go the following week.

Antofret—(Continued from page 201)

cut on the underside, as you see illustrated in the diagram here.

The usefulness of this work will be obvious if you give it a little thought. A three-step base to, say, a table lamp, can be cut from a single piece of wood recessed, braced with one or two rim pieces can be made (as shown above); double bases to hold a model can be cut from a single piece of wood.

Although we have previously mentioned a circle as being cut, there is little reason why various other shapes cannot be used. The circle or ellipse is the easiest, as it does not involve any

cornering. If you want angles at all in your work, get them as open as possible, such as shown in the tray above.

No Sharp Angles

A rightangle is comparatively simple, providing the saw is turned quickly at the corner, and, of course, maintained at its correct angle. Anything more acute than 90 degrees is not to be recommended. This type of cutting is also helpful if you want to have a little raised panel or a small decorative piece on a large object, and will save cutting and gluing a second piece of wood.

For this type of work you can even go a stage further and carve the raised piece to shape it for decoration of a leaf or a flower, or a geometrical design. When the cutting and gluing is completed, the wood can be finished in the normal way—either by stain and polish or paint, varnish, etc.

Having offered the suggestion and explained the method, we have no doubt, that many readers will try their hand at this novelty, and be able to introduce it into quite a number of articles to make either for use or decoration.

Some further suggestions for the handyman for HOME IMPROVEMENTS

KEEPING coal or coke in the flat is quite a problem and an inconvenience and a spare cupboard makes the ideal small coal cupboard. The first step is to bring the floor of the cupboard up a bit so you do not damage skirting and floor. Slope this downwards to the opening, as shown in the detail at

but first of all you must bring the pelmet structure out a little more. It cannot be too deep and probably 6ins. to 12ins. will do it. Build the framework like a roof, as shown, from $\frac{1}{2}$ in. tongued and grooved boards. Take it back 6ins. on either side, which will help to balance the shape of the bay better and not make it look shallow and long.

plete legs, this will be quite suitable. It does not matter if the back legs are bent and the front ones straight.

Clean up the side pieces and see all nails are removed. Small castors can be fitted to enable it to be pushed around, so everybody in the working party can use it. Paint or enamel it to make it attractive.

Now get the handy member of the family to make the deep pocket-like interior from gay cretonne or other suitable material. Note the pockets in the sides for smaller items. Use upholstery nails for fixing.

Two-tier Tray Stand

Greengrocers are selling some very nice shallow fruit trays. They are from good wood and can be cleaned up with the glasspaper block quite easily. Some are about 15ins. by 18ins. Get a couple of these, knock in the projecting nails and clean up. Reinforce the corners with a few light tacks, as they may come adrift when you start to cut away for the legs.

Get four clean square legs about 1 $\frac{1}{2}$ ins. in size and 20ins. high. Take the corners out of both trays so the legs will go through the top box and also through the bottom one. Have the bottom tray about 6ins. from the floor. Now fix together and you have a handy tray (Fig. 4) for the accessories, with a useful home below for the garments being made. Also, knitting and other sewing can be left here instead of being piled up on settee or easy chair.

If there is quite a bit of sewing, then fit a $\frac{1}{2}$ in. dowel rod along one side in screw hooks. Cotton reels are then fitted and you can see what colour you want and draw off as much as you need.

Castors can be fitted and the addition of pocket-like pouches on the end could hold other items such as oddments of wool. Pattern books can also be fitted up in a similar bag. A quickly-made box like a knife box will be handy for knitting needles, tapes and other items.

The worker may think of other ideas but the main function is to make it a self-contained mobile needle-work unit on four wheels. The larger the wheels the better, so that it can be used in the garden. (284)



Fig. 1—A coal holder with door slide

Fig. 1. The floor need only be raised about 9ins.

At each side of the cupboard door, and allowing for the clearance of door, fix two uprights, as shown in the small sketch. Fix so there is sufficient space for the boarded front to be taken out. The boards for the front can be in two sections if space is limited.

Make the opening hatch just large enough to get the shovel in and level with the false floor of the bunker. Due to its height off the floor you will prevent dust and dirt spreading. Coal should be tipped in from the top.

Log Holder

For those in a flat here is a suggestion for storing a few logs ready for burning. Buy a medium sized tin bath with the handles at each side. Paint it in a gay colour of green or yellow and bind the handles with raffia or coloured cane. You can make a mottled effect to match the room furnishing by dappling it with a sponge in another shade.

Many of us have come across the not-too-deep bay window, but we feel that this is certainly the best place to have the favourite settee. To put the settee in and bring the curtains round and over, it does so spoil the effect and also the curtains. It never looks right and the whole arrangement looks untidy.

Plan to make a light pelmet (see Fig. 2)

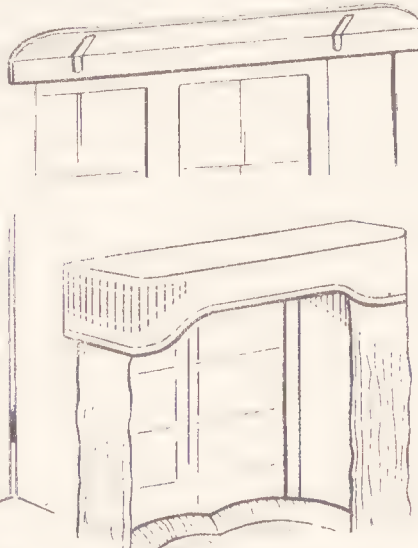


Fig. 2—Bracket and fixing for pelmet

Fasten a fixing board along the full length and then fit the new part to this. Small angle brackets will be best to hold the cross struts. Stain or paint the underside before fitting up, and then you will be able to fit the new type curtain railway to this. Make the pelmet about 9ins. deep and from thin plywood lined with parchment. Failing this, you can use fabric.

Simple Workstand

An old chair frame which can be no further use can form a good workstand (see Fig. 3), where you can see all the materials at a glance. As long as you have the four side sections and com-

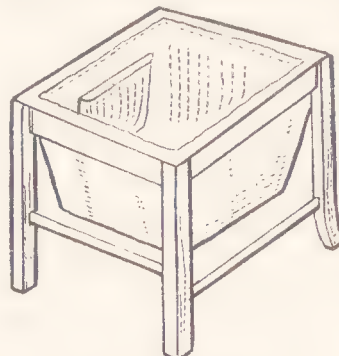


Fig. 3—A simple workstand

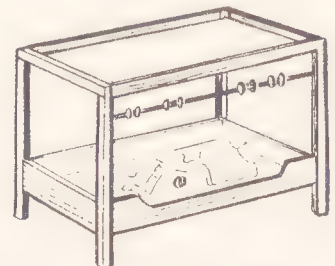


Fig. 4—A two-tier tray stand

The home carpenter should find no difficulty in A FIREPLACE SCREEN



A WELL made fire screen is an attractive feature in any living room. Even though it is most in use during the summer, the making of it, and especially the glazed tapestry centre (if desired), is essentially a job for the winter months.

The tapestry design and materials can be purchased at any reasonably well stocked needlework supplies shop. The design is usually printed in colours on the actual canvas, and a supply of coloured threads, together with needles and a leaflet of instructions, are usually included.

There are many handymen who would not disdain to do the tapestry work themselves, but, naturally, such work offers a fine chance for a lady, be she mother, lady friend or wife, etc., to co-operate.

Alternative Centres

It is not essential to have a tapestry centre, however. A picture or set of pictures can be used, to quote one alternative.

Such a job is best done in a good hardwood, such as oak or mahogany. The writer used mahogany taken from an old piece of broken-up furniture. Softwoods (deal) are hardly suitable.

The first thing to do is to make the stiles (part 1). These are of 1in. by $\frac{3}{4}$ in. section, and should be cut about 24ins. long. The $\frac{3}{4}$ in. width faces the front. The only part of the job that is likely to cause extra care and skill is in making a rebate (clearly shown in Fig. 5), which is stopped at point (X) 15 $\frac{3}{4}$ ins. from the top end. In

the case of the rails, parts 2 and 3, this rebate job is easier, as it is carried right through.

The Rebate

There are several ways of working the rebate. The writer prefers to use a small metal plough plane and making a groove, as shown in sketch (Y) (Fig. 5), working with the fence of the plane on the left, and using a $\frac{1}{8}$ in. cutter.

A marking gauge with the pin set rather more forward than usual is then used to score, rather heavily, a line $\frac{1}{4}$ in. from the bottom. Then, with the aid of a chisel, the waste is easily removed and the rebate is left as at (Z). If necessary, this may be cleared with a small metal bull-nose plane or a regular rebate plane.

In the case of the stopped rebate, however, as much as possible should be done with the plough plane as just described, and the rest shaped by chisel.

The Styles

Take great care, by studying the diagrams, to get the rebates of the two stiles facing inwards. The two stiles are not absolutely identical, but are, as engineers say, 'handed'.

The top rail (2) is just a 16 $\frac{1}{2}$ in. (finished size) length of 1in. by $\frac{3}{4}$ in. wood, with a $\frac{3}{4}$ in. by $\frac{1}{4}$ in. rebate running straight

through. As indicated in Fig. 5, when the fitting up is done, a small piece must be cut each end from the narrow part of the rebate on part 2.

Part 3 is a 16in. length of 2in. by 1in. wood. The straight-through rebate is first cut and then the arched shaping is done. The small sketch under Fig. 1 dimensions the shaping here. For a simple job this shaping can be omitted, but shaping makes the finished job more graceful.

Legs

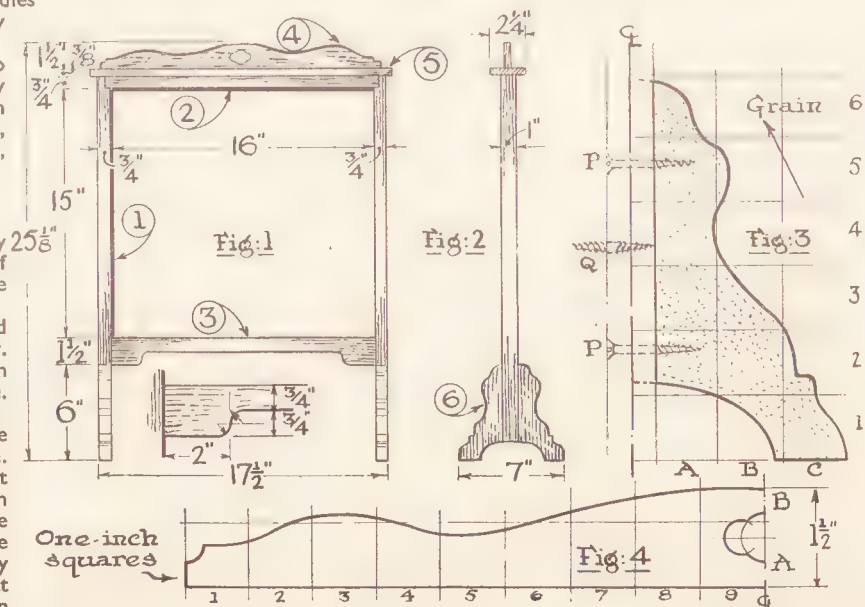
The legs (part 6) can sometimes be bought ready cut, and if they are of a suitable size, they may well be used. Fig. 3, however, details by the well known system of squaring-up, a suggested shape, cut from 1in. thick wood, with the grain going somewhat diagonally if possible. The actual shape of one leg (four required) is shown stipple dotted. The rest of the diagram shows the position of the leg in the centre.

As can be seen from Fig. 2, the legs are fixed neatly to each side of the lower end of each stile and, if well done, the three parts look as though they were cut from one piece of wood.

One leg is simply screwed to the stile, as at (P) Fig. 13. To secure the other, a double-ended screw is used. Fit one part of it in the end of the stile (Q) (Fig. 3). Then press the other leg against it and turn this leg as though screwing up a screw-cap bottle. Add a little glue to the facing surfaces before you start.

The end of the stile is left with 1in. or 2ins. to spare, and when the glue is dry, shape the bottom arch, and with a fine-set plane, neaten up the base.

To shape the pieces, parts 6, use a



bowsaw or a toymaker's fretsaw. Part 4 also calls for shaping. A half pattern is shown in Fig. 4. Double a strip of paper. Draw the design on it, keeping the centre line (marked C.L.) on the fold of the paper. Cut with scissors, the shape so drawn. Open out the paper and you will have a perfectly symmetrical full size design. This part is accommodated on a strip of $\frac{3}{8}$ in. wood, 17 ins. by 1 $\frac{1}{2}$ ins. (finished size).

The centre decoration is done with $\frac{3}{8}$ in. and $\frac{1}{2}$ in. diameter bits in a brace.

Part 5 is just a plain strip of $\frac{3}{8}$ in. wood, 2 $\frac{1}{2}$ ins. wide and 18 ins. long.

Assembly

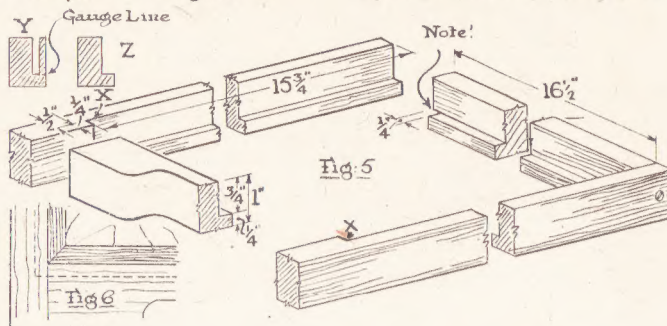
To assemble, fit part 4 to 5 by means of small screws from below. Fit rails 2 and 3 to the stiles. A screw must be used for fixing at each corner. Drive it well below the surface and neatly plug the holes with plastic wood, neatening off when dry.

Combined parts 4 and 5 are now screwed, from below, to rail 2. In Fig. 5 the parts have been shown 'exploded' and also conventionally broken, so as to economise in drawing space.

A general testing for squareness and uprightness, etc., now follows. Make

sure the screen stands on an 'even keel'. In the centre there should be a rebate into which the tapestry, etc., can be dropped. A plywood panel is now cut to fit into the 'well', and this panel can be used as a template for the glass.

A few small tacks at the corners will hold it, but take care that the weave of the canvas is not distorted. Thoroughly clean the inner surface of the glass. Then insert the glass and then the tapestry-mounted plywood panel.



Make sure that the glass rests flat within the rebate. Some work with a chisel may be needed to prevent rocking.

This done, the job may be french polished. It is much more convenient to do it now than when the panel and glass are fitted.

The tapestry, suitably trimmed to size, is mounted on the plywood panel.

To hold the panel in, get some strips of approximately $\frac{3}{8}$ in. section strip wood and fit them in, as indicated in Fig. 6, with a mitre at the corners. Small panel pins are used to tack these strips in.

Thus one completes a well worthwhile job, the finished appearance of which can be gauged from the photograph.

Simple Toys from Scrap Wood

WE give here one or two illustrations which are almost self-explanatory. They are of figures which may be cut from workshop scraps of 3- or 5-ply. Fig. 1 is more detailed than the others, while Fig. 2 shows how the parts of the camel are made up, and the scale dimensions.

The other illustrations under Fig. 3 are offered in the nature of suggestions which may prove fruitful to the hobbyist's imagination. They all stand up and their limbs, heads and tails are freely movable.

The features of the camel are painted on here with poster colours. In the pig, which has a much larger (or rounder) head, the eyes, nose and mouth may be cut out and glued on separately. Painting will still be necessary but the general effect will be more attractive. If you

first stain the complete figures, by the way, this will serve as a very good painting foundation.

Small calendars, if desired for utility, are quite plentiful. The bow should be made from brightly coloured ribbon and tied as neatly as possible. A variety of different animals like this will decorate a Christmas tree or serve as little hand-outs for the New Year. (324)

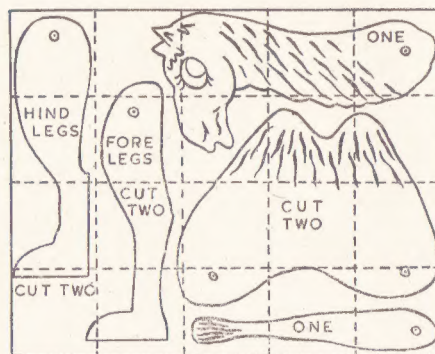


Fig. 2—Shapes to mark out in lin. squares

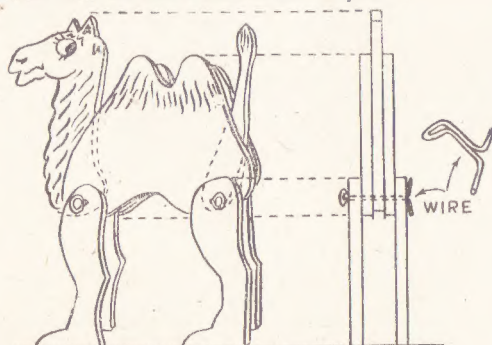


Fig. 1—Side and end view showing construction

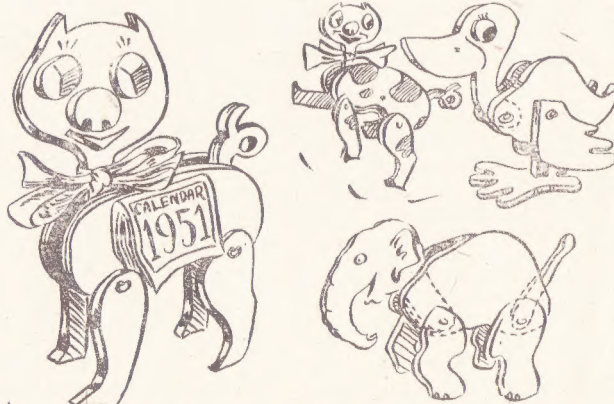


Fig. 3—Some other simple suggested figures

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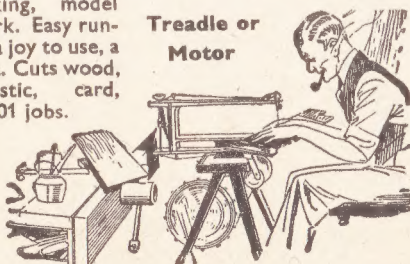
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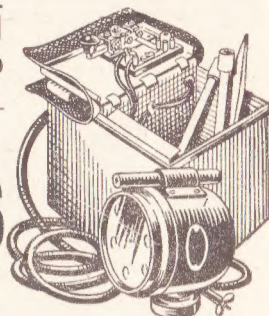
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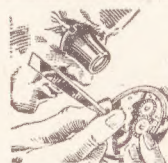


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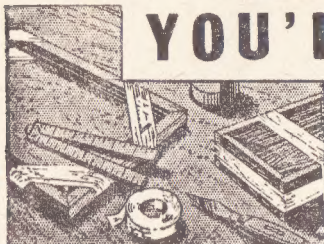
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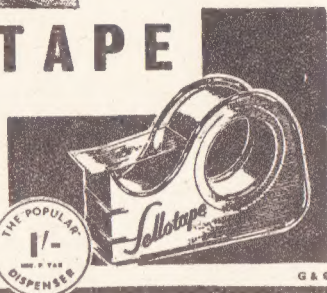
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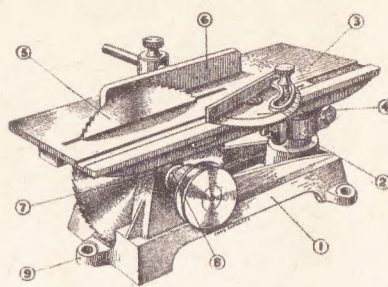
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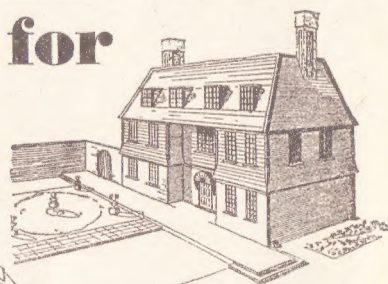
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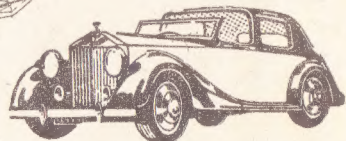
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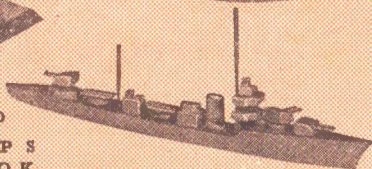
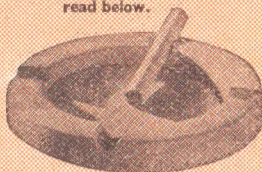
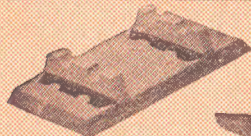
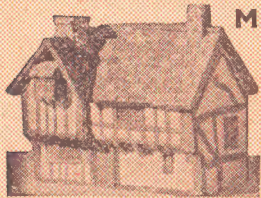
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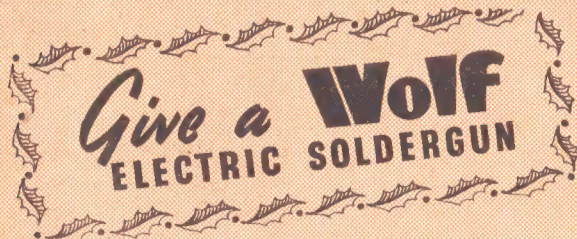


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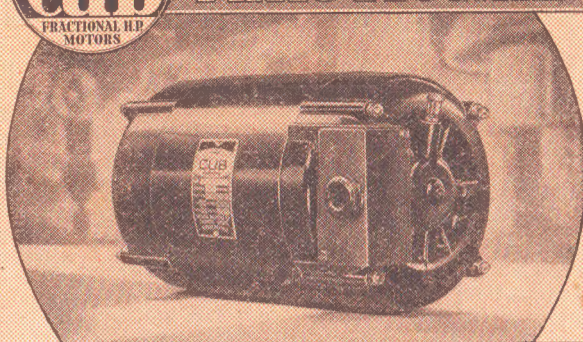
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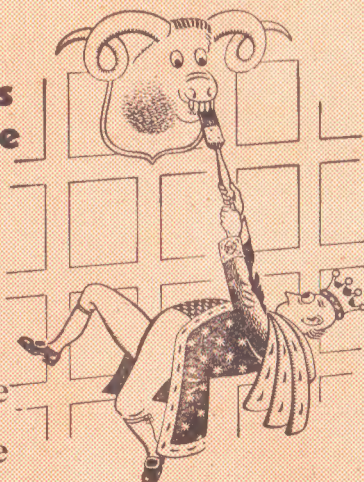
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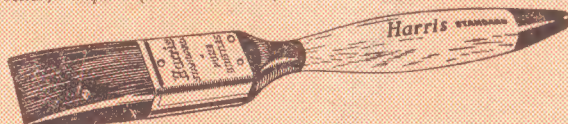
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